

AUTHORS: Tunitskiy, N. N., Devyatykh, G. G.,  
Petrov, P. S., Torlin, B. Z.

57-28-4-32/39

TITLE: The Separation of Carbon Isotopes by the Thermodiffusion of  
Carbon Monoxide (Razdeleniye izotopov ugleroda termodiffuziye  
okisi ugleroda)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 4, pp. 881-  
-885 (USSR)

ABSTRACT: The investigations described here had already been terminated  
in 1953, when reference 9 was published. - The separation of  
carbon isotopes by means of the thermal diffusion of carbon  
monoxide in glass towers with a diameter of 9 and 14,5 mm, a  
length of 1 and 2 m with a platinum wire of 0,4 - 0,6 mm dia-  
meter as a heating-element were investigated here. The  
experimental results are in agreement with the theory by  
Dzhons (Jones ?) - Ferri - Onsager. - It is shown that in a  
number of cases the use of carbon monoxide as working gas  
has certain advantages as compared to the use of methane. The  
ratio of the separating factor of carbon to that of oxygen  
differs from the theoretical value. The latter is equal to 2.  
The magnitude of the deviation depends on the steam-content

Card 1/2

The Separation of Carbon Isotopes by the Thermodiffusion of Carbon Monoxide 57-28-4-32/39

in the gas.

There are 5 figures, 3 tables, and 12 references, 3 of which are Soviet

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karlova, Moskva  
(Moscow, Physical-Chemical Institute imeni L. Ya. Karlov)

SUBMITTED: April 17, 1956

Page 2/2

PETROV, Petr Sergayevich; SEMENOV, S.M., red.; ANDREYEVA, L.S., tekhn.  
red.

[For trade-union activist workers on raising labor productivity]  
Profaktivu o rezervakh povysheniia proizvoditel'nosti truda.  
Moskva, Profizdat, 1962. 77 p. (Biblioteka profsoiuznogo ak-  
tivista, no.9(33)) (MIRA 15:5)  
(Labor productivity) (Trade unions)

PETROV, P.St.; ILIEVA, L.

Physicomechanical properties of the Quaternary and Pliocene sediments  
in the territory of Sofia. Izv Geolinst BAN 8:133-192 '60.

(EEAI 10:5)

(Bulgaria--Sedimentation and deposition)

GORANOV, Al.; VITKOV, V.G.; PETROV, P.St.

Perlites in the Eastern Rhodope Mountains. Izv Geol inst BAN 8:323-345  
'60. (EEAI 10:5)

(Bulgaria--Pearlite)

PETROV, P. St.

Basic regularities in the distribution of mineral waters in  
Bulgaria. Trudove vuzkhu inzh geol khidro 3:83-158 '64.

Hot mineral springs in the Chepino Valley. Ibid.:159-185

CA 12 FIVE, 1. 1.

116

Heart and carbohydrate metabolism. Ivan Iankov and  
P. I. Petrov. *Chuvstvenno i znan, Khabarovsk* 20, 117  
6, 1946-47 (German summary). The blood sugar value  
of 91 persons with decompensated heart disease. 4 and those  
of 10 persons with decompensated myocarditis were determined. No  
digitalis was given shortly before or during blood drawing.  
The results show no definite regularity between degree of  
decompensation and the blood sugar level. J. M.

PETROV, P. I.

"The history of the Soviet Union."

Sovetskaya Ieditsina, Moscow, 1977  
No. 12, p113



PETROV, P.T.

Seminars in medical history in Kharkov Medical Institute. Sovet.  
zdravookhr. 11 no.4:19-21 July-Aug 1952. (GLML 23:2)

1. Docent. 2. Of the Department of the History of Medicine, Khar'kov  
Medical Institute (Director -- Docent I. F. Kononenko).

PETROV, P.T.

DERKACH, V.S.; PETROV, P.T., kandidat meditsinskikh nauk

Review of Danilo Samoilovich's "Selected Works." 2d ed. V.S. Derkach,  
P.T. Petrov. Vest. AMN SSSR no. 4:56-60 '53. (MLBA 7:1)

1. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for Derkach).  
(Samoilovich, Danila Samoilovich, 1746-1805) (Medicine)

PETROV, P.T., student

How I.P. Pavlov made use of historical facts in his works. Year 1957.  
no. 9:997-999 S. 157. (M. A. 1. 19)

1. Asreana istorii meditsiny Khar'kovskogo meditsinskogo instituta  
(PAVLOV, IVAN PETROVICH, 1849-1936)

PETROV, P.T. (Khar'kov)

Activity of the Section of Historians of Medicine of the  
Kharkov Province Hygienic Society. Sov. zdrav. 22 no.7:  
91-93 '63 (MIRA 1-:14)

ILIEVA, L.; PETROV, P. S.; PAIAZOV, An.

Mineral composition of the finely dispersed part of the Pliocene  
clay deposits in the region of Sofia. Izv Geol inst BAN 9:53-  
76 '61.

PETROV, P.T., dotsent

Mistakes in historical medical literature. Vrach.delo no.6:  
653-654 Je '60. (MIRA 13:7)

1. Kafedra organizatsii zdravookhraneniya i istorii meditsiny  
Khar'kovskogo meditsinskogo instituta.  
(BIBLIOGRAPHY--MEDICINE)

PETROV, P.T., dots.

St.A. Tomilin, outstanding hygienist and medical historian.

Vrach.delo no.11:1215-1216 N'58

(MIRA 12:1)

1. Kafedra organisatsii zdravookhraneniya i istorii meditsiny  
Khar'kovskogo meditsinskogo instituta.

(TOMILIN, SERGEI ARKAD'EVICH, 1877)

1. PETROV, P. V.
2. USSR (600)
4. Drilling and Boring Machinery
7. Fastening of tool in boring mill spindle.  
Stan. 1 instr. 23. No. 9. 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953, Unclassified.



GOYKOLOV, Ye.F.; KANTOROVICH, I.G., inzh.; PETROV, P.V.; RAYTSESS, A.Ya.;  
CHERNOV, A.V., inzh.; SHASHKOV, V.F.; SHISHKOV, I.A.; SHMIDT,  
Kh.M.; KEZMAKH, L.I., retsenzents; KUDRYAVTSEV, A.V., retsenzents;  
V redaktirovani priimeli uchastiye: ZOTOV, A.V.; TELYANER,  
D.M.. SHIROKOVA, G.M., red.izd-va; STEPANOVA, E.S., tekhn.red.;  
RUDAKOVA, N.I., tekhn.red.

[Handbook for builders of reinforced concrete industrial chimneys  
and silos] Spravochnik stroitelia zhelezobetonnykh zavodskikh  
trub i silosov. Pod red. A.V.Chernova. Moskva, Gos.izd-vo lit-ry  
po stroit., arkhitekt. i stroit.materialam, 1959. 300 p.

(MIRA 13:1)

(Silos)

(Chimneys)

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256000

8/032/60/026/04/19/046  
B010/B006

AUTHORS: Kulik, A.A., Petrov, P.V.

TITLE: Magnetization of Workpieces in Quality Control of Thermal Processing

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol 26, No. 4, pp. 460 462

TEXT: Hardness control of workpieces can be carried out by residual magnetic induction determinations. Magnetization can be attained by means of an apparatus containing solenoids and having a current supply which is suddenly interrupted. In the present case, the influence of the type of weakening of the magnetic field of the solenoid (from the maximum value down to zero) on the magnitude of the remanent magnetic induction of the test piece was investigated. Tests of differently shaped workpieces made of steel of the types 30KhGS, 18KhNVA, and 2Kh13 were carried out by using solenoids 194 mm long (inside opening 45mmx40 mm, winding n = 1780). Test pieces were subjected to various thermal pretreatments. It was found that in controlling the quality of thermal pretreatments, the most precise results are obtained if the voltage of the magnetic field of the solenoid is steadily decreased from the maximum

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Magnetization of Workpieces in Quality Control  
of Thermal Processing

S/032/60/026/04/19/046  
B010/B006

value to zero. A unique relation between the remanent magnetic induction and the thermal pretreatment, however, is obtained only if a certain voltage of the magnetizing field is maintained for each material (e.g. a value of  $H = 350$  oersteds for 30KhGSA steel). It is most practical to magnetize the workpiece up to complete saturation. The applicability of electromagnets for this purpose was investigated. A diagram (Fig 3) and the description of an electromagnet for magnetizing cylindrical workpieces are given. There are 3 figures and 5 Soviet references.

Card 2/2

PETROV, P.Ye., aspirant; ALIKAYEV, V.A., nauchnyy rukovoditel' raboty.  
dot sent

Some data on the methodology of electrocardiographic examination  
of newborn calves. Veterinariia 42 no.12:54-57 1965.

1. Moskovskaya veterinarnaya akademiya.

PETROV, R.

More about dried fruit. Obshchestv. pit. no. 7:51 J1 '52.  
(MIRA 11:7)

(Fruit, Dried)

PETROV, R.  
USSR/Electronics - Literature

Feb 53

"What to Read in Television," R. Petrov

"Radio," No 2, pp 63-64

Most books on television for amateurs have been published recently by Gosenergoizdat in the "Mass Radio Library" series under the general editorship of Academician A. I. Berg. Among the books were S. A. Yel'yashkevich's "Commercial Television Receivers and their Use" (Promyshlennyya televizory i ikh ekspluatatsiya) and A. Ya. Korniyenko's "The Wired Television Center" (Radiotranslyatsionnyy televisionnyy uzel.

PETROV, R. A.

Characteristics of the course of peptic ulcer in middle and old age. Terap. arkh. no.12:77-83 '61. (MIRA 15:2)

1. Iz kafedry fakul'tetskoy terapii (zav. - prof. A. G. Gukasyan) sanitarno-gigiyenicheskogo fakul'teta I Moskovskogo ordena Lenina meditsinskogo instituta imeni I. M. Sechenova.

(PEPTIC ULCER)

PETROV, R.A.

Effect of vitamin B<sub>12</sub> on the state of liver cells in different forms  
of experimental dystrophy. TSitologiya 1 no.6:649-652 N-D '59.

(MIRA 13:4)

1. Kafedra farmakologii Blagoveshchenskogo meditsinskogo instituta.  
(CYANOCOBALAMINE) (LIVER--DISEASES) (DYSTROPHY)



BLIDCHENKO, I.P., inzh.; PETROV, S.A., inzh.

Lubricating oils for the cylinders of locomotive steam  
engines. Trudy TSNII MPS no.180:114-138 '59.

(MIRA 13:4)

(Locomotives--Lubrication) (Steam engines--Cylinders)

PETROV, B.A.

3883. RESEARCH IN MINE CONSTRUCTION. (ISSLEDOVANIYA PO SHAKHTNOY  
STROITEL'STVU). Petrov, B.A. et al. (Moscow: Ugletekhnizdat, 1955, 244pp.)  
title in Report Accessions, Brit. Museum.

PETROV R.A.

2348. Effect of varying diet on the number of amitoses in the liver of rodents. R. A. Petrov. *Trud. Biologichesk. med. inst.* 1956, 1, 83-89. *Referat. Zh. Biol.*, 1956, Abstr. No. 47793. The effect of insufficiency or absence of protein in the diet on the no. of dividing and di-nuclear cells in the liver of mice and young rats (11-70 g. weight) was investigated. In one series of experiments protein deficiency was produced in mice by the oral administration of an aqueous solution of tannin (1g./100 ml.) which converts the protein into an indigestible, stable, albuminate; a slight increase in the no. of amitotically dividing and di-nuclear cells was noted. Administration of a 5 g./100 ml. soln. for 14 days causes a considerable decrease in the no. of dividing and di-nuclear cells, and also an increase in the no. of degenerate elements in the liver. In the following series of experiments on young rats rendered protein-deficient for 19 days the no. of dividing and di-nuclear cells was considerably diminished and subsequently restored to normal during the 27 days observation on a complete diet. It is concluded that a disturbance of the protein intake (causing a fatty degeneration of the liver), when small, causes a stimulation of amitotic division and has the opposite effect when large. (Russian) A. K. Gazybowski

L 47324-66 EWT.../EWT(m)/T/SW(t)/ETI LJP(c) JD/SG

ACC NR: AR602764

SOURCE CODE: UR/0058/66/000/004/A077/A077

AUTHOR: Titova, A. G.; Petrov, R. A.

TITLE: Growing and certain properties of ferromagnetic single crystals of the system  $(\text{Bi}_{3-2x}\text{Ca}_{2x})[\text{Fe}_2](\text{Fe}_{3-x}\text{V}_x)\text{O}_{12}$

SOURCE: Ref. zh. Fizika, Abs. 4A646

REF SOURCE: SI. Simpozium. Protsessy sinteza i rosta kristallov i plenok poluprovodnik. materialov, 1965. Tezisy dokl. Novosibirsk, 1965, 41-42

TOPIC TAGS: single crystal growing, ferromagnetic material, crystallization, garnet, crystal orientation

ABSTRACT: Single crystals of ferromagnetic garnets containing no rare-earth elements were obtained by the method of crystallization from a solution in a melt. The solvent and the ratio of the components in the charge were selected. The maximum heating temperatures were obtained as functions of the ratio of the components and their mutual solubility. The solubility of garnet crystals in the investigated solvents was investigated in order to obtain the temperature of the end of crystallization. The phase composition of the melt after the end of the crystallization was determined. A study was made of the upper outlines of the crystals, and the connection between the outlines and the chemical composition of the crystal and the growth conditions was investigated. The microstructure and some physical properties of the synthesized crystal were investigated. [Translation of abstract]

SUB CODE: 20

Card 1/1

ACC NR: AP7002412

SOURCE CODE: UR/0363/66/002/012/2260/2261

AUTHOR: Titova, A. G.; Yerastova, A. P.; Petrov, R. A.

ORG: none

TITLE: Growing and certain properties of ferromagnetic garnet crystals

$\text{Bi}_{3-2x}\text{Ca}_{2x}\text{Fe}_{5-x}\text{V}_x\text{O}_{12}$

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 12, 1966, 2260-2261

TOPIC TAGS: garnet, saturation magnetization, vanadium compound, bismuth compound, calcium compound, iron compound

ABSTRACT: The object of the work was to grow single crystals of solid solutions in the system  $\text{Bi}_{3-2x}\text{Ca}_{2x}\text{Fe}_{5-x}\text{V}_x\text{O}_{12}$  in order to study ferromagnetic resonance, magnetic and certain other properties of these crystals. The crystals were grown by crystallization from solution in the melt; x ranged from 0.96 to 1.46. Also grown were garnet single crystals with a minimum bismuth content:  $\text{Bi}_{10.06}\text{Ca}_{2.92}\text{Fe}_{4.94}\text{V}_{1.06}\text{O}_{12}$ . In addition to the garnet, two crystalline phases,  $\text{CaFe}_2\text{O}_4$  and  $\text{FeFe}_2\text{O}_4$ , were formed. Goniometric measurements showed that in contrast to  $\text{Y}_3\text{Fe}_5\text{O}_{12}$  crystals, the  $\text{Bi}_{3-2x}\text{Ca}_{2x}\text{Fe}_{5-x}\text{V}_x\text{O}_{12}$  crystals have cube faces {100} in addition to {110} and {211} faces. A study of the structure of these faces showed their different solubilities in the mother liquor. As the vanadium content decreases from 1.46 to 1.0, the saturation magnetization decreases, while the ferromagnetic resonance width increases. The  $\text{Bi}_{10}\text{Ca}_{2.0}\text{Fe}_{4.0}\text{V}_{1.0}\text{O}_{12}$  crystals are not magnetic. Crystals with  $x \geq 1.25$  have a

UDC: 553.85

Card 1/2

ACC NR: AP7002412

relatively low value of  $2\Delta H$  and are therefore strong competitors of expensive yttrium iron garnet. Orig. art. has: 2 figures.

SUB CODE: 07/ SUBM DATE: 12Jan66/ ORIG REF: 002/ OTH REF: 002

Card

2/2

1000 1/2 1/2

hydrodynamic evaluation of a ship with a light stern. "Bull.  
no. 242 132-138 195. (NIA 1951)

L 58387-65 EWT(1)/EWP(m)/EWA(d)/EPR/FCS(k)/EWA(h)/EWA(c) Pd-1/P1-1 NY  
 ACCESSION NR: AT5015717 UR/2563/65/000/248/0132/0138

AUTHOR: Petrov, R. L.

TITLE: Gas-dynamic design of a light-piston appliance

SOURCE: Leningrad. Politeknicheskii institut. Trudy, no. 248, 1965. Tekhnicheskaya gidrogazodinamika (Technical gas hydrodynamics), 132-138

TOPIC TAGS: shock tube, nozzle flow analysis, shock wave analysis, shock tube design, reflected shock wave

ABSTRACT: The arrangement of a shock-tube-type setup with a light-weight piston is shown in a schematic layout (see Fig. 1 of the Enclosure). Before the experiment starts the chamber 1 is filled with a light gas under high pressure, the channel 4 with a low-pressure working gas, and the chamber 7 and tank 8 are evacuated. The motion of the piston 3 after the rupture of the diaphragm 2, as well as the motions of a rarefaction wave behind and a shock wave in front of it, the retardation of the piston caused by the reflected shock wave and its standstill (equilibrium) at the distance  $8\epsilon_0$  (close to  $L_1$ ), the rupture of the diaphragm 5, and the efflux of the working gas into the nozzle are discussed and analyzed. Equations are derived for determining the paths of the piston and of the shock wave, as well as for the pres-

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ACCESSION NR: AT5015717

asures on both sides of the piston. The gas parameters behind the multiply reflected shock waves and in the space between the face of the channel 4 and the piston, and the equilibrium pressure on the piston are discussed and used to determine the parameters of the gas expanding in a nozzle of given dimensions, and the time of the efflux of the gas into the working chamber 7. A numerical example of calculating the gas-dynamic parameters of a light-piston appliance in which helium heated by an oxygen-hydrogen mixture is used as the driving gas is presented; the algorithm of the computation is given, and the results are shown in tables and a diagram. Orig. art. has: 2 tables, 4 figures, and 18 formulas. [VK]

ASSOCIATION: Leningradskiy politekhnicheskij institut (Leningrad Polytechnical Institute)

SUBMITTED: 00

ENCL: 01

SUB CODE: ME

NO REF SOV: 003

OTHER: 002

ATD PRESS: 4046

Card 2/3

L 58387-65

ACCESSION NR: AT5015717

ENCLOSURE: 01

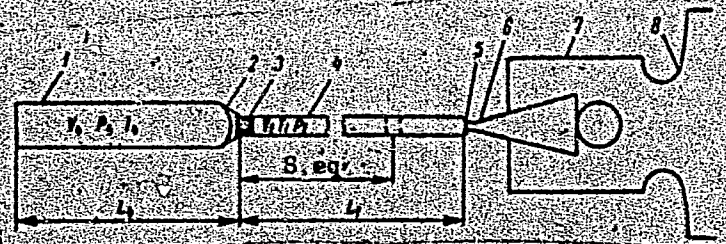


Fig. 1. Arrangement of a shock-tube-type setup with a light piston

- 1 - High-pressure chamber; 2 - exchangeable diaphragm;
- 3 - light-weight piston; 4 - low-pressure channel;
- 5 - exchangeable diaphragm; 6 - nozzle; 7 - working chamber; 8 - vacuum tank.

Cord 3/3

VAKHER, E.A. [Vaher, E.]; PETROV, R.M.

Investigating the drilling of large wells with a core-drill unit.

Khim. i tekhn. gor. slan. i prod. ikh perer. no.11:93-101 '62.

(MIRA 17:3)

PETROV, R.P.; BATASHEV, B.G. [Batashov, B.H.]; ONOPRIYENKO, M.Ye.  
[Onopriienko, M.IE.]

Some remarks on the stratigraphic scale of the Greater Krivoy  
Rog Basin. Geol. zhur. 25 no.2:105-107 '65. (MIRA 18:6)

"APPROVED FOR RELEASE: 06/15/2000

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APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001240510012-5"

LEVINSON-LESSING, F.Yu.[Loewinson-Lessing, F.IU.]; STRUVE, E.A.;  
PETROV, R.P.; DEMIN, A.M.; BORSUK, A.M.; YEZHOV, A.I.;  
AFANAS'YEV, G.D., red.; PETROV, V.P., red.; USTIYEV, Ye.K.,  
red.; VLASOVA, I.V., red. izd-va; SAMARCHYAN, L.M., red.  
izd-va; SMIRNOVA, Z.A., red. izd-va; GUROVA, G.A., tekhn.  
red.

[Dictionary of petrography] Petrograficheskii slovar'. Pe-  
rer. i dop. R.P.Petrovym i dr. Pod red. G.D.Afanas'eva, V.P.  
Petrova i E.K.Ustieva. Moskva, Gosgeoltekhizdat, 1963. 447 p.  
(MIRA 16:6)

(Russian language--Dictionaries)  
(Petrology--Dictionaries)

107100  
PETROV, R.P.

Nomenclature of metamorphic rocks of iron ore formations.

Izv. AN SSSR. Ser. geol. 22 no.9:54-71 S '57. (MIRA 11:1)

(Rocks, Crystalline and metamorphic--Classification)

PETROV, R.P., kandidat geologo-mineralogicheskikh nauk.

Contribution to the graphic method of determining the yield and  
extraction of the useful component. TSvet. met. 26 no.2:31-33  
Mr-Ap '53.

(Ore dressing)

(MLRA 10:9)



PETROV, R. P

AUTHOR: Petrov, R.P. 11-9-6 14

TITLE: On the Terminology of Metamorphic Rocks of Iron-Ore Formations  
(K nomenklature metamorficheskikh porod zhelezorudnykh formatsiy)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geologicheskaya, 1957,  
# 9, p 54-71 (USSR)

ABSTRACT: The author analyzes the terminology of the rocks composing iron-ore formations, which is used in the Soviet Union and abroad, and criticizes its drawbacks as insufficiently definite and sometimes even confusing and misleading. The author puts forward the problem of systematization of terminology and suggests that the rocks of iron-ore formations should be classified on the basis of simple diagnostic signs. All the rocks of the iron-ore formations can be divided into 3 groups: single-component rocks, bi-component rocks and three-component rocks. The single-component rocks can be made up of silicic acid (a); oxides of iron (b); and silicates (c). Bi-component rocks contain one or another combination of two of the three single-component rocks. There exist all three possible combinations: (ab), (bc) and (ac). The ratio of components can vary from zero to 100 %. Three-com-

Card 1/2

YEMEL'YANENKO, O.V.; NASLEDOV, D.N.; PETROV, R.V.

Hernst--Ettingshausen effect in p-type gallium arsenide. Fiz. tver.  
tela 2 no.10:2455-2457 '60. (MIRA 13:12)

1. Fiziko-tekhnicheskiy institut AN SSSR, Leningrad.  
(Gallium arsenide—Electric properties)

**PETROV, R.V.**

Antagonistic properties of *Streptococcus lactis*. Zhur.mikrobiol.epid.  
i immun. no.4:79 Ap '54. (MLRA 7:5)

1. Iz kafedry mikrobiologii Voronezhskogo meditsinskogo instituta.  
(*Streptococcus lactis*)

PETROV, R.V. kandidat meditsinskikh nauk

Simple apparatus for sterile crushing of organs. Lab.delo no.1:  
22-23 Ja-1 '55. (FILRA 8:8)

(CULTURE MEDIA,

appar. for sterile crushing of organs for bacteriol.diag.)

88. Susceptibility of Irradiated Animals to Disease Increased

"Use of Irradiated Animals in Laboratory Practice," by R. V. Petrov, Laboratornoye Delo, No 6, Nov/Dec 56, pp 14-17

The irradiation of animals to increase their susceptibility to various infectious diseases can be used in laboratory practice. "Both the data in the literature and the results of our investigations make it possible for us to recommend the use of animals exposed to sublethal doses of radiation (X rays, gamma rays, etc.) for certain practical and reserach purposes." Irradiated animals may be used for the following purposes: increased susceptibility to various pathogens; biological tests for tuberculosis, leptospirosis, and possibly other infections; the accumulation of a large number of pathogens, for example, *Rickettsia*, in an animal organism; increased pathogenicity of bacteria; and comparison of the effectiveness of various therapeutic preparations. (U)

PETROV, R.V.; IL'INA, L.I. (Moskva)

Modifications in the antigenic properties of tissues in radiation sickness in rats. *Biul. eksp. biol. i med.* 41 no.4:59-61 Ap '56.  
(MLRA 9:8)

1. Predstavlena deystvitel'nyy chlenom AMN SSSR N.N. Zhukovym-Verezhnikovym  
(RADIATION SICKNESS, experimental,  
antigenic changes in (Rus))  
(ANTIGENS AND ANTIBODIES,  
antigenic changes in exper. radiation sickness (Rus))

PETROV, R.V. (Moskva)

Raised protective characteristics of anti-tetanus serum after its irradiation with roentgen rays. Biul.eksp.biol.med. 41 no.5:48-51 May '56. (MLRA 9:8)

1. Predstavlena deystvitel'nyy chlenom AMN SSSR N.N.Zhukovym-Vereshnikovym

(IMMUNE SERUMS

tetanus antiserum, eff. of x-irradiation)

(TETANUS, immunol.

antiserum, eff. of x-irradiation)

(ROENTGEN RAYS, eff.

on tetanus antiserum)

USSR/General Problems of Pathology - Immunity

U-1

Abs Jour : Ref Zhur - Biol., No. 18, 1958, 84712

Author : Petrov, R. V., Il'ina, L. I.

Institute : No institute is given

Title : The Antigenic Properties of Tissues of Irradiated Animals

Orig Pub : Tr. Vses. konferentsii po med. radiol. Eksper. med. radiol. Moscow, Medgiz, 1957, 180-183

Abstract : Rabbits were immunized with an emulsion of tissues (liver, spleen) or with the blood of normal rats (NR) or of rats (IR) irradiated with 5000 r of X-rays. Antisera against the tissues of the NR reacted in approximately the same titer with the antigen (A) of these tissues and of the tissues of the IR; however, antisera against the tissues of the IR contained far fewer agglutinins and complement-binding antibodies against the A of normal tissues than against the tissue A of the IR. Studies were also made of the

Card 1/2



PETROV, R.V.

Sensitivity of irradiated animals to pathogenic anaerobic organisms and effectiveness of seroprophylaxis of anaerobic infection in radiation injuries. Med.rad. 2 no.2:60-65 Mr-Apr '57. (MLRA 10:7)

(GAS GANGRENE, experimental,

eff. of gamma rays on sensitivity of animals to infect.

& seroprophylaxis (Rus))

(TETANUS, experimental,

same)

(GAMMA RAYS, effects,

on exper. gas gangrene & tetanus susceptibility in animals, seroprophylaxis (Rus))

USSR / General Problems of Pathology. Allergy.

U

Abs Jour: Ref Zhur-Biol., No 11, 1958, 51505.

Author : Petrov, R. V., Ipina, L. I.

Inst : Not given.

Title : On the Mechanism of the Allergenic Action of Antibiotics.

Orig Pub: Antibiotiki, 1957, 2, No 4, 3-7.

Abstract: Under the effect of antibiotics (4-5 injections of 5000 units of streptomycin and 2000 units of penicillin) antigens appeared in the tissues of mice. (Apparently protein and antibiotic complexes). It is possible with these antigens to sensitize guinea pigs to antibiotics. (Test in an isolated intestinal loop.)

Card 1/1

127204, R 1  
APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001240510012-5"

Noninfectious immunology with regard to the biological effects of ionizing radiation [with summary in English]. Med.rad. 2 no.6:3-12  
N-D '57. (MIRA 11:2)

(ROENTGEN RAYS, eff.

on noninfectious immun., review)

(IMMUNITY, eff. of radiations on

x-rays on noninfectious immun., review)

Country	: USSR
Category	: Microbiol. (Microbiology)
Author	: Petrov, A. A.
Institut.	: -
Title	: The effect of irradiation on the formation of antibodies in experimental leptospirosis in irradiated organisms
Orig. Pub.	: Zh. Mikrokol., Epidemiol. i Immunobiol., 1957, No. 5, 105-107
Abstract	: 27 rabbits, 12 mice and 20 guinea pigs were used. Irradiation was performed with sublethal doses of X-rays: 500-600 r for the rabbits, 300 r for the mice, and 200 r for the guinea pigs. In animals infected 2 to 24 hours after irradiation, the formation of antibodies was delayed in comparison with controls, and their titers were lower; in those infected 2 days after irradiation, no antibodies were found in the blood. The leptospiremic phase in irradiated animals was prolonged beyond that in the controls. The duration of leptospirosis was extended in proportion to the extent of suppression of antibody formation. - M. A. M. (trans)
Card:	1/1

PETROV, R.V.

Quantitative characteristics of autoinfection in radiation sickness  
[with summary in English]. Vest.rent. 1 rad. 32 no.1:3-8 Ja-P '57.

(MLRA 10:6)

(ROENTGEN RAYS, eff.

induction of penetration of intestinal bact. into system  
in white rats)

(INTESTINES, bacteriol.

penetration of bacteria into system after x-irradiation  
in white rats)

PETROV, R.V. (Moskva)

Endogenic infection in an irradiated organism. *Usd. Sovr. Biol.*  
44 no.1:82-92 J1-Ag '57. (Mikr 10 10)  
(RADIATION SICKNESS)

*Petrov, R.V.*  
USSR /Microbiology. Medical and Veterinary  
Microbiology.

F-6

Abs Jour: Referat. Zh.-Biol., No. 9, 1957, 35681

Author : Petrov, R.V.

Title : The Increase in the Protective Properties of  
Anti-Tetanus Serum After its Irradiation with  
X-rays.

Orig Pub: Biul. eksperim. biol. i meditsiny, 1956, 41,  
No. 5, 48-51

Abstract: The anti-tetanus serum "Diatherm 3 IEM AMN" was  
exposed in open glass beakers to a total dose  
of 510 thousand r. The serum was tested several  
days after the irradiation by injecting mice  
immediately after their infection with an abso-  
lutely fatal dose of tetanus germs. The injection

Card 1/3

USSR /Microbiology. Medical and Veterinary  
Microbiology.

F-6

Abs Jour: Referat. Zh.-Biol., No. 9, 1957, 35681

of non radiated serum saved 7% of the animals from death and the irradiated 35%. The irradiated serum caused a more expressed leucocytosis and phagocytosis of staphylococci in comparison with the non radiated. The non-specific stimulation of protective powers in the organism is evident in that the irradiated serum preserved from death after infection with typhoid bacteria, more than twice the number of mice that the non radiated did. Concerning this same matter, in the opinion of the author, the fact speaks that the irradiated serum doubles the

Card 2/3

USC / [unclear] [unclear] The Effects of [unclear]  
Part 1.

Re Jour: Ref Dur-1-1., N 19 156, 3334.

$\Gamma : \text{group} \rightarrow \text{monoid}$

10 : Sensitivity of *Yersinia enterocolitica* to the  
11 : antibiotic *Streptomycin* in Atlantic Oceanic  
12 : Isolates in *Yersinia enterocolitica*.

Original: Hol. rel. 1. dya. 17. 11. 12. 60-11.

1. Heart: White, soft, elastic, somewhat Y-shaped, (the  
 broad base of the V with a sulcular disc at 90° -  
 45° to horizontal, a small sensitivity to intra-  
 vascular pressure, 100 mm. Hg (90) and aortic  
 (70). Maximal sensitivity to pressure is at the

52 : 4/3

Approved for Release: 08/19/2000 : CIA-RDP80-0051  
Using an animal model of the effects of chemical  
Factors.

Los Jerm. der Zinn-Ind., Nr. 2 1958, 93/34.

infectiousness of the animals, was noted with infection 5 days after radiation, and after 15 - 37 days sensitivity returned to the normal level. Increased sensitivity to *B. tetani* was expressed by death in 4 days instead of 6 in the control of all the mice infected 10 hours after radiation. In guinea pigs, infected with *B. perfringens* 10 hours after irradiation with 367 r, the course was more severe than in the control animals - in a large percent of the cases the former died even earlier than the latter. In young pigs infected with GG twenty-four hours after radiation an immediate injection at the focus of infection of 0.2 ml (160 AU) of serum against *B. perfringens* gave the same prophylactic effect as in the controls. Serum prophylaxis of tetanus

Card : 2/3



PETROV, R.V.; ROGOZKIN, V.D. (Moskva)

Principles of antibiotic therapy in acute radiation sickness.  
Pat.fiziol. i eksper.terap. 2 no.1:3-11 Jan 1966.

(MLRA 12:9)

(RADIATIONS, inj. eff.

eff. of antibiotics in exper. animals, review  
(Rus))

(ANTIBIOTICS, effects,

on exper. radiation inj., review (Rus))

PEIKOV, R V

KLEMPARSKAYA, N.N.; PETROV, R.V.; IL'INA, L.I.

Biological effect of cellular structures from normal and irradiated  
animals [with summary in English]. Med.rad. 3 no.1:34-41 Jan-F '59.  
(RADIATIONS, effects, (MIRA 11:4)  
biol. eff. of cellular structures isolated from  
irradiated animals (Rus)

PETROV, R.V. (Moskva)

Exogenous infections in radiation sickness. Usp.sovr.biol.  
46 no.1:48-61 '58 (MIRA 11:9)

(INFECTIONS, experimental,  
eff. of radiations on exogenous infect., review (Rus))  
(RADIATIONS, effects  
on exper. exogenous infect., review (Rus))

IL'INA, L.I. (Moskva); PETROV, R.V. (Moskva)

Features of protein synthesis in the organoids of tissue cells  
of normal and irradiated white rats. TSitologia 1 no.3:289-292  
My-Je '59. (MIRA 12:10)  
(PROTEIN METABOLISM) (RADIATION--PHYSIOLOGICAL EFFECT)

PETROV, R.V.; SHIKHODYROV, V.V.

Morphological changes in experimental leptospirosis in irradiated  
guinea pigs. Med. rad. 4 no.5:20-23 My '59. (MIRA 12:7)

(LEPTOSPIROSIS, exper.

eff. of x-irradiation on morphol. changes in guinea  
pigs (Rus))

(ROENTGEN RAYS, eff.

on morphol. changes in exper. leptospirosis in guinea  
pigs (Rus))

PETROV, R.V.; IL'INA, L.I.

On species, organ, and organoid specificity of tissue antigens in  
irradiated animals. Med.rad. 4 no.12:41-47 D '59. (MIRA 13:5)

(ANTIGENS)

(RADIATION SICKNESS exper.)

SERGIN, S.A.; PETROV, R.V.

Small size P-76-Sh04 spinning machine. Tekst. prez. 19 no.5:26-28  
My '59. (MIRA 12:10)

1.Starshiy inzh.-konstruktor Penzenskogo mashinostroitel'nogo  
zavoda (for Sergin). 2.Starshiy inzhener ispytatel'noy stantsii  
Penzenskogo mashinostroitel'nogo zavoda (for Petrov).  
(Spinning machinery)

17 (10, 12)

SOV/16-59-6-6/46

AUTHORS: Klemparskaya, N.N., Sosova, V.F., Alekseyeva, O.G., Petrov, R.V.,  
Chekatilo, G.A. and Nemirovich-Danchenko, O.R.

TITLE: A Study of Some Aspects of the Action of Antibiotics on Radiation  
Sickness

PERIODICAL: Zhurnal mikrobiologii, epidemiologii i immunobiologii, 1959<sup>2</sup> Nr 6,  
pp 26-34 (USSR)

ABSTRACT: The article was presented at a conference in the Tsentral'nyy nauchno-  
issledovatel'skiy rentgeno-radiologicheskiy institut Ministerstva  
zdravookhraneniya SSSR (Central X-ray and Radiological Research Institute  
of the Ministry of Public Health, USSR) in Leningrad on November 29, 1957.  
It is a symposium of articles by various authors on the effects of anti-  
biotics on the microflora of the body after irradiation and certain  
factors of the body's reactivity. Sosova studied the effects of strepto-  
mycin, biomylin and penicillin on the development of infectious in-  
flammation in rabbits irradiated with 800-1,100 r of X-rays. Chekatilo  
studied the effects of per os administration of biomylin in doses of  
1 mg for 6-12 days on the amount of microbes contained in the colon of  
white mice irradiated with 600 r of X-rays. Nemirovich-Danchenko studied

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SOV/16-59-6-6/46

A Study of Some Aspects of the Action of Antibiotics on Radiation Sickness

the properties of microflora excreted by dogs treated with polonium. Alekseyeva confirmed the antibiotics-resistance of commensal microflora in dogs which received per os slow-radioactive Strontium <sup>90</sup> but were not treated with antibiotics. U.G. Gasanov, M.N. Yegorova, Z.V. Yermol'yeva, V.Ya. Kudryavtseva and G.P. Rudnev have noted the great effects of antibiotics on many physiological processes and immunobiological activity. Alekseyeva studied the intensity of the phagocytic reaction of blood leukocytes in dogs irradiated with 600 r of X-rays, of whom some were given antibiotics therapy. N.N. Klemparskaya, S.L. Kras:nskaya, T.M. Kokhanovskaya, Ye.I. Milevskiy, Kh.Kh. Planel'yes and N.V. Chumachenko have studied the effects of antibiotics on immunity - with contradictory results. G.A. Mikhaylets has studied their effect on allergy. R.V. Petrov and L.I. Il'in have investigated the possibility of forming complex antigen (allergen) groups by combining antibiotics with substances from the tissues of the living organism. From the above works a number of conclusions may be drawn. The introduction of antibiotics into animals, irradiated with lethal X-ray doses before infection, helps to prevent the development of inflammatory infection. Resistant microbe strains in the irradiated body seem to react to antibiotics by increasing in virulency; their number in the tissues and

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30V/16-59-6-6/46

A Study of Some Aspects of the Action of Antibiotics on Radiation Sickness

body surfaces also increase. The commensal bacteria in the intestines of an irradiated body show an increased resistance to antibiotics, without antibiotics having been used, simply under the influence of changed environmental conditions. The administration of antibiotics may provoke neutropenia and thus diminish the effectiveness of the phagocytic reaction. Antibiotics tend to inhibit the development of anaphylaxis to heterogenic protein. Antibiotics may themselves be allergens as a result of their combination with body substances.

There are 3 photos, 6 figures, 1 graph, 1 table and 15 references, 14 of which are Soviet and 1 English.

SUBMITTED: December 27, 1957

Card 3/3

PETROV, R.Y.; KABAKOV, Ye.N. (Moskva)

C reactive protein: survey of foreign literature. Klin. med. 37  
no.5:28-32 My '59 (MIRA 12:8)

(BLOOD PROTEINS

C reactive protein, review (Rus))

ZHUKOV-VEREZHNIKOV, N.N.; PETROV, R.V. (Moskva)

Immunology of growth and cell and tissue development as a new branch  
of biology. Usp. sovr. biol. 47 no.2:235-254 Mr-Apr '59. (MIRA 12:7)

(IMMUNOLOGY,

developmental, review (Rus))

(GROWTH,

developmental immunol., review (Rus))

LEBEDINSKIY, A.V., red.; KRAYEVSKIY, N.A., red.; KLOTKOV, F.G.,  
red.; GRIGOR'YEV, Yu.G., red.; MARGULIS, U.Ya., red.;  
PETROV, A.V., red.

[Collection of abstracts on radiation medicine for 1957]  
Sbornik referatov po radiatsionnoi meditsine za 1957 god.  
Moskva, Medgiz. Vol.1. 1959. 202 p. (MIRA 17:5)

PETROV, R.V. (Moskva)

Role of radiology in the development of the theoretical principles  
of infection and immunity. Usp. sov. biol. no.2:174-191 S-C '60.

(MIRA 13:11)

(RADIOBIOLOGY)

(IMMUNITY)

IL'INA, L.I.; PETROV, R.V.

Protein metabolism and immunological peculiarities of cellular  
organoids in acute radiation sickness. TSitologiya 2 no.3:296-  
303 My-Je '60. (MIRA 13:7)

1. Akademiya meditsinskikh nauk SSSR, Moskva.  
(PROTEIN METABOLISM) (RADIATION SICKNESS)

04774

24.7700 (1043, 1143, 1559)

26.2420

S/181/60/002/010/016,051  
B019/B056

AUTHORS:

Yemel'yanenko, O. V., Nasledov, D. N., and Petrov, R. V.

TITLE:

The Nernst-Ettingshausen Effect in p-Type Gallium Arsenide <sup>21</sup>

PERIODICAL:

Fizika tverdogo tela, 1960, Vol. 2, No. 10, pp. 2455-2457

TEXT: In an earlier paper (Ref. 1) the authors investigated the Nernst-Ettingshausen effect in n-type gallium arsenide. The coefficient  $Q^{\perp}$  of the transverse Nernst-Ettingshausen effect in p-type gallium arsenide is graphically represented as a function of temperature. As it turned out,  $Q^{\perp}$  is considerably lower for p-type gallium arsenide than for n-type gallium arsenide. This is due to a lower mobility of the holes as compared to the electrons. At temperatures below room temperature,  $Q^{\perp}$  is negative, which may be explained by the scattering of carriers by impurity ions. This explanation agrees with measured results of the Hall-mobility of holes. Above 350 to 450°K,  $Q^{\perp}$  becomes positive. This convinces the authors of the fact that at these temperatures the acoustic vibrations are the main scattering centers. The mixed conductance

Card 1/2



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The Nernst-Ettingshausen Effect in p-Type  
Gallium Arsenide

S/181/60/002/010/016/051  
B019/B056

beginning at 600 - 800°K again makes  $Q^1$  negative. Finally it is pointed out that the results obtained here may be explained by the modern theory of thermomagnetic effects. Furthermore the results obtained make it possible to estimate the part played by acoustic vibrations of the lattice in scattering processes. There are 1 figure 1 table. and 3 references. 2 Soviet and 1 US. X

ASSOCIATION. Fiziko-tekhnicheskii institut AN SSSR Leningrad (Institute  
of Physics and Technology of the AS USSR, Leningrad)

SUBMITTED. April 4 1960

Card 2/2

ZHURAVLEV, A.I.; BENEVOLENSKIY, V.N.; PETROV, R.V.

Possible mechanism of the preventive activity of antibiotics in  
radiation injury. Antibiotiki 5 no.6:87-91 N-D '60. (MIRA 14:3)  
(ANTIBIOTICS) (RADIATION PROTECTION)

KLEMPARSKAYA, N.N.; PETROV, R.V.

Role of immunological research in studying the pathogenesis  
of acute radiation sickness. Radiobiologiya 1 no.4:583-590  
'61. (MIRA 17:2)

SHIKHODYKOV, V.V.; PETROV, R.V.; SHITNEVA, M.F.

Signs of porous connective tissue sensitization in acute  
radiation sickness. Pat. fiziol. i eksp. terap. 5 no.5:  
66-70 1967 (MIRA 1967)

PETERSON, O.P.; BEREZINA, O.N.; KOZLOVA, I.A.; SKLIANSKAYA, Ye.I.; PETROV, R.V., red.; ZAKHAROVA, A.I., tekhn. red.

[Influence of ionizing radiation on virus infections and on anti-viral immunity] Vliianie ioniziruiushchego izlucheniia na virusnye infektsii i protiyovirusnyi immunitet. Moskva, Gos. izd-vo med. lit-ry Medgiz, 1961. 165 p. (MIRA 14:9)  
(RADIATION—PHYSIOLOGICAL EFFECT) (VIRUS DISEASES) (IMMUNITY)

PETROV, R.V.

37201

17

27 2400

S/560/61/000/011/007/012  
E027/E635

AUTHORS: Zhukov-Verezhnikov, N.N., Mayskiy, I.N.,  
Yazdovskiy, V.I., Pekhov, A.P., Gyurdzhian, A.A.  
Nefed'yeva, N.P., Kapichnikov, N.M., Podoplelov, I.I.,  
Rybakov, N.I., Klemparskaya, N.N., Klimov, V.Yu.,  
Novikov, S.N., Novikova, I.S., Petrov, R.V.,  
Sushko, N.G., Ugryumov, Ye.P., Fedorova, G.I.,  
Zakharov, A.F., Vinogradova, I.N., Chamova, K.G.  
and Buyko, Ye.A.

TITLE: The results of the first microbiological and  
cytological experiments in Space in Earth satellites

SOURCE: Akademiya nauk SSSR. Iskusstvennyye sputniki Zemli.  
no. 11. Moscow, 1961. Rezul'taty nauchnykh  
issledovaniy, provedennykh vo vremya poletov vtorogo  
i tret'yego kosmicheskikh korabley-sputnikov, 44 - 67

TEXT: The authors report the results of their investigations  
of biological objects which had been exposed to space conditions  
in satellite vehicles. The first part of the work was devoted  
to a study of the survival of cells of differing levels of  
organization under the influence of radiation and other  
Card 1/5

11

S/560/51/000/011/007/012  
EG27/2635

The results of the ---

unfavourable factors, in comparison with control materials which remained in the laboratory over the same period. In experiments with bacteria 2ml. samples of suspensions of *Escherichia coli*, *Aerobacter aerogenes*, *Staphylococcus aureus* and *Clostridium butyricum* containing 500 million organisms or spores per ml. were sealed in ampoules, and exposed to a space flight of unstated duration; the number of viable individuals after the exposure did not differ significantly from the values for the control samples. A similar experiment was carried out with the T2 phage of *E. coli* and the 1321 phage of *A. aerogenes*, which were sent in the second satellite; again, no significant reduction in the titre of the phage preparations could be detected after return from space. Similar results were obtained with preparations of phage sent into space in the fourth and fifth satellites. Two bottles and six tubes of HeLa cells, some of which were saturated with oxygen, were exposed to space flight

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17

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E027/E635

The results of the . . .

conditions, after it had first been shown that vibration and acceleration did not detach the cells from the glass. The cultures without oxygen appeared normal on return, whereas in those exposed to oxygen most of the cells had degenerated. Subculture showed that 90% of the cells, whether detached from or remaining on the glass, were dead; however, two tubes gave good growth, and the cells which grew up showed no abnormalities of morphology. No antigenic differences could be detected in the cells in anaphylaxis and desensitization experiments in guinea-pigs. In subsequent space flights fibroblast and human amnion cell cultures were studied, with similar results. Pieces of human and rabbit skin were also used. On August 12th 1960 two pieces of skin 2.5 x 3.5 cm. in size and 0.5 mm. thick were taken from a human donor, placed in Hanks solution and sent into space in the second satellite. On recovery they were regrafted on the original site in the donor and became firmly attached after seven days.

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The results of the ---

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2027/E635

Similar results were obtained with two other donors. An apparatus was devised for making a subculture in space, in order to study the ability of bacteria to multiply under space conditions. In experiments with *Glostridium butylicum* no deviations from the controls were observed. The second part of the work was devoted to a study of possible genetic effects brought about by exposure to space conditions, mainly by looking for the production of auxotrophic mutants and lysogeny in bacteria. The former were detected by inoculation on a layer of minimal medium which was then covered with an overlay of the same medium in order to fix the colonies. When the latter had grown up their position was noted and an overlay of complete medium was then put on, and the colonies which then grew up as a result of the diffusion of essential nutrients were selected as auxotrophic mutants. No such mutants could be found in suspensions of *Escherichia coli* recovered from the second satellite. The experiments on the induction of lysogenic bacteria were carried out on a strain of *E. coli* lysogenized by a  $\lambda$  phage which had been exposed to cosmic

Card 4/5

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The results of the ---

5/560/61/000/011/007/012  
E027/E635

radiation in the fifth satellite. Free phage particles were removed by adding phage antiserum; after the end of the latent period the action of the antiserum was cut short by diluting 1:100, streptomycin was added to inhibit the host organisms, and the mixture was plated out on the indicator strain in order to count the phage particles produced. The results obtained, considered in comparison with control experiments, provided no evidence of induction by cosmic radiation during a space flight of ninety minutes. No difference was observed in the plaque morphology. No changes could be detected in the chemical and physical properties of calf thymus deoxyribonucleic acid recovered after a space flight. The results as a whole indicate that no damage was suffered by isolated cells during a brief exposure to space conditions. There are 6 figures and 10 tables. f

SUBMITTED: May 23, 1961

Card 5/5

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30363

S/205/61/001/004/023/032

D298/D303

AUTHORS: Klemparskaya, N. N., and Petrov, R. V.

TITLE: The significance of immunological research in studying the pathogenesis of acute radiation sickness

PERIODICAL: Radiobiologiya, v. 1, no. 4, 1961, 583-590

TEXT: By reference to recent research works, the authors show how immunological studies can assist in clarifying the theory of the pathogenesis of radiation sickness. Of great significance are immunological methods of studying processes such as the denaturation changes in disintegrating tissues, the resorption of antigen tissue substances into the blood and the physiological response to them. New research, the authors point out, has shed new light on the autoimmune process and its role at various stages and with various forms of radiation sickness. Some authors believe that the development of autosensitization is, by and large, impossible due to the general inhibition of antibody genesis after irradiation. The authors point out that this opinion is probably incorrect

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S/205/61/001/004/023/032  
D298/D303

The significance of...

and derives from too short a period of observation in experiments. With early death of the animal, the antibody content of the blood is probably still too small to be detected. In no work did the authors find any case where antibodies were not detected in immunized rabbits after fairly protracted irradiation of the animals. As for the question of prolonged inhibition of antibody genesis, the facts are probably distorted by insufficiently sensitive means of recording antibody synthesis. Modern research indicates that the inhibition of antibody genesis after irradiation is by no means absolute. Modern research also shows that auto-sensitization phenomena are important for understanding, not all types of radiation death, all living creatures or all primary cell reactions, but only for explaining the mechanism of the development of the pathological reactions in warm-blooded animals as a result of the primary action of definite doses of radiation on the cells, i.e., for understanding the pathogenesis of acute and subacute radiation sickness. Morphological and biochemical research has revealed the destruction of cells in various organs and tissues in the first few hours after irradiation.

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D298/D303

The significance of...

This is accompanied by changes in the tissues' antigenic properties and by the circulation of tissue proteins in the blood. The tissue-destruction products which circulate in the blood are inevitably bio-active. Immunological studies have revealed that during the latent period of radiation sickness the body becomes increasingly sensitive to auto-tissue substances and begins to develop auto-antibodies and cytotoxins. In 1960, N. N. Klemparskaya and M. V. Rayeva used a new method, devised by Ouanier (Uan'ye) (1955), for detecting small amounts of antibodies in cases of medicinal allergy, (Ref. 10: Byull. eksperim. biol. i med., No 5, 77, 1961). The authors describe this method as applied to the detection of auto-tissue substances and give an account of the experiments which have been made to test its accuracy. During the clinically marked period of radiation sickness, all autosensitization phenomena increase in intensity. The observations of various researchers on this aspect of the problem are described. These observations show that during acute radiation sickness, all links in the change of the autoimmune process are detected: destruction of the tissues and change

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D298/D303

The significance of...

in their antigenic properties, the circulation of tissue antigens in the bloodstream, the development of a state of autosensitization and the appearance of auto-antibodies. A study of autosensitization is also important for understanding the features of the physiological response to bacterial infection and to antigenic stimulus. Specifically, it might explain the hemorrhagic nature of foci of inflammation. There are indications that, with the body's heightened sensitivity to tissue substances, the local formation of tissue decay products is the decisive factor and leads to appearance of the hemorrhagic nature of the inflammation. Consequently, apart from the injurious effects of bacterial toxins and proteins, the infectious process may directly affect the state of auto-sensitization by activating the cellular decay process in the foci of inflammation. As for the significance of autosensitization in the physiological response to heterogenic antigen stimulation, it is demonstrated that radiation has an injurious effect on the function of the cells which produce antibodies. A number of experimental works show that, apart from the direct injurious action of radiation on the antibody genesis function of cells, there is a further mechanism which inhibits the

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The significance of...

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D298/D303

immune response to antigens. Underlying this mechanism is the process of autosensitization to the body's own tissue products. Other works show that the physiological response to any antigen induces inhibition of antibody genesis to subsequent antigen stimuli. Instances where this phenomenon has been noted are cited. There are 50 references: 35 Soviet-bloc and 15 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: J. Sterzl, Mechanisms of antibody formation. Prague, p. 107, 1960; H. F. Wood, S. Anderle, C. W. Hammond, C. P. Miller, J. Exptl. Med., 111, 601, 1960; T. Makinodan, Federat. proc., 19, 586, 1960; P. Abramoff, J. Immunol., 85, 648, 1960.

SUBMITTED: March 14, 1961

Card 5/5

4

ZHUKOV-VEREZNIKOV, A.N.; MAYSHIY, I.N.; YELDANSHIY, V.I.; ILL'IN, A.I.;  
 SYRIZIAN, A.A.; MEDVED'YEV, N.F.; KASIDIN, V. P.M.; PLODIN, A.  
 I.I.; RYBAKOVA, N.I.; PLEMFARSHAYA, L.N.; PLEMFARSHAYA, L.N.;  
 S.N.; NOVIKOVA, I.S.; PETROV, R.V.; GUSKO, S.V.; KARTOV, Ye.P.;  
 PELOREVA, G.I.; ZAKHAROV, A.F.; VINOGRADOVA, I.M.; CHAYVA, I.M.;  
 BUIYD, Ye.A.

Results of first microbiological and cytological experiments in  
 space on artificial satellites. Isk.sput.Zem. no.11:42-67 '61.  
 (MIRA 1961)

(Space microbiology) (Artificial satellites)



PETROV, R.V.; L'VITSYNA, G.V.

Incomplete antibodies detected with the aid of Coombs' test  
in the blood of irradiated animals. Pat. fiziol. i eksp.  
terap. 6 no.4:63-68 J1 Ag 1962. (MIRA 17:8)

PETROV, R.V.

Recent data on the effect of ionizing radiations on antibody  
formation. Med.rad. 6 no.8:68-71 Ag '61. (MIRA 14:8)  
(RADIATION--PHYSIOLOGICAL EFFECT) (ANTIGENS AND ANTIBODIES)

PHASE I BOOK EXPLOITATION

SOV/6254

Petrov, Rem Viktorovich

Immunologiya ostrogo lucheвого porazheniya (Immunology of Acute Radiation Sickness) Moscow, Gosatomizdat, 1962. 266 p. 5000 copies printed.

Ed.: A. I. Zavodchikova; Tech. Ed.: N. A. Vlasova.

**PURPOSE:** The book is intended for radiobiologists, physicians, and investigators in the field of radiation sickness.

**COVERAGE:** The book discusses the effect of radiation on antimicrobial immunity, infectious complications in irradiated animals, and non-infectious immunology. The author thanks V. N. Benevolenskiy, E. K. Dzhihidze, A. I. Zhuravel, L. I. Il'ina, N. N. Klemparskaya, M. A. Lagun, G. M. L'vitsyna, N. L. Melik-Pashayeva, A. S. Petrova, V. D. Rogozkin, M. P. Sbitneva, A. B. Tsypin, and V. V. Shikhodyrov. References follow each chapter.

Card 1/6

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L 33552-65 EWA(h)/EWT(m)

ACCESSION NR AMLOH2768

BOOK EXPLOITATION

Petrov, Ben Viktorovich; Prigodny, Vladimir Nikolskyevich; Stepanov, Yuriy Sergeyevich; Shal'nov, Mikhail Ivanovich

Protection from radioactive fallout (Zashchita ot radioaktivnykh osadkov), Moscow, Miro, 1963, 167 p., 1<sup>st</sup> ed., 28,000 copies printed.

TOPIC TAGS: radioactive fallout, radiation injury, radiation dosimetry, thermonuclear explosion

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OTHER: 019

Cord 2/2

S/205/63/003/001/020/029  
E028/E185

**AUTHORS:** Petrov R.V., and Sosova V.P.

**TITLE:** Relative immunological tolerance induced by irradiation

**PERIODICAL:** Radiobiologiya, v.3, no.1, 1963, 99-103

**TEXT:** In a survey of the literature concerning immunological tolerance the authors put forward three groups of facts which support the hypothesis that the tolerance induced by irradiation is not absolute but relative. 1) The suppression of antibody formation after injection of an antigen which is observed in animals after irradiation is very variable in extent; thus, when mice are immunized with sheep and rat red cells simultaneously and then irradiated, there is almost complete suppression of the formation of antibody to rat cells, and only partial suppression of the formation of antibody to sheep red cells. The same effect can be observed in rabbits immunized with human serum, to which several antibodies are formed in varying amounts. 2) The inductive phase before the appearance of antibody may be greatly prolonged after irradiation of the animal, and leads to the

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Relative immunological tolerance ...

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erroneous impression that antibody formation has been suppressed, whereas examination at a late stage would reveal that antibody formation is only delayed, and eventually reaches fairly high titres if the animal lives sufficiently long after irradiation. Examples are given of delayed antibody formation in irradiated rabbits immunized with bacterial antigens. 3) Autoantibodies are formed in irradiated animals in response to autoantigens produced by the effect of radiation upon the body proteins. Irradiation therefore cannot have produced complete immunological tolerance.

There are 2 figures and 1 table.

SUBMITTED: November 21, 1961

Card 2/2

PETROV, R.V.; MAN'KO, V.M.; YEGOROV, I.K.

Variations in the capacity of antibody production in mice  
of highly inbred lines. Dokl. AN SSSR 153 no.3:728-730  
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